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मानक

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IS 5054-2 (2007): Radio frequency connectors, Part 2: Coaxial unmatched connector [LITD 3: Electromechanical Components and Mechanical Structures for Electronic Equipment]



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भाग 2 समअक्षीय अमेलित संयोजक

*Indian Standard*  
**RADIO FREQUENCY CONNECTORS**  
**PART 2 COAXIAL UNMATCHED CONNECTOR**

ICS 33.120.30

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**BUREAU OF INDIAN STANDARDS**  
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NEW DELHI 110002

## NATIONAL FOREWORD

This Indian Standard (Part 2) which is identical with IEC 60169-2 : 1965 'Radio-frequency connectors — Part 2: Coaxial unmatched connector' along with Amendment No. 1 (1982) issued by the International Electrotechnical Commission (IEC) was adopted by the Bureau of Indian Standards on the recommendation of the Electromechanical Components and Mechanical Structures for Electronic Equipment Sectional Committee and approval of the Electronics and Information Technology Division Council.

The text of IEC Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.
- b) Comma (,) has been used as a decimal marker, while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

Amendment No.1 to the above International Standard has been given at the end of this publication.

In this adopted standard, reference appears to the following International Standard for which Indian Standard also exists. The corresponding Indian Standard, which is to be substituted in its place, is listed below along with its degree of equivalence for the edition indicated:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
IEC 60169-1 : 1987 Radio-frequency connectors — Part 1: General requirements and measuring methods	IS 5054 (Part 1/Sec 1) : 1995 Radio frequency connectors: Part 1 General requirements and measuring methods, Section 1 General ( <i>second revision</i> )	Identical

Only the English text of the International Standard has been retained while adopting it as an Indian Standard, and as such the page numbers given here are not the same as in the IEC Publication.

*Indian Standard*  
**RADIO FREQUENCY CONNECTORS**  
**PART 2 COAXIAL UNMATCHED CONNECTOR**

1. Dimensions

1.1 Connector

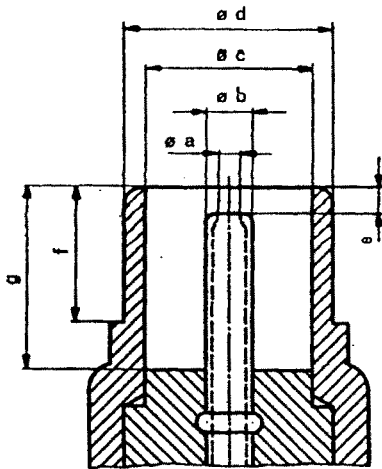


FIGURE 1

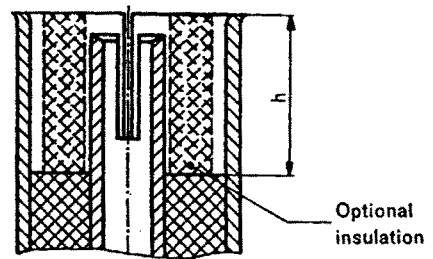


FIGURE 2

The millimetre dimensions are derived from the original inch dimensions.

	a	b	c	d	e	f	g	h
mm	1.3 min	2.36 $\pm 0.076$	8.05 min	9.525 $\pm 0.05$	0.8 $\pm 0.4$	7.11 min	9.1 min	7.54 min
in	0.051 min	0.093 $\pm 0.003$	0.317 min	0.375 $\pm 0.002$	1/32 $\pm 1/64$	0.280 min	23/64 min	19/64 min

1.2 Gauges

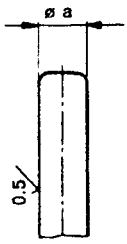


FIGURE 3

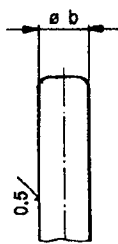


FIGURE 4

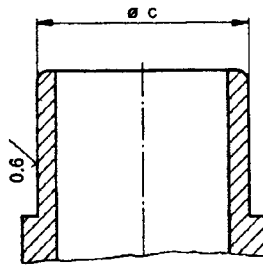


FIGURE 5

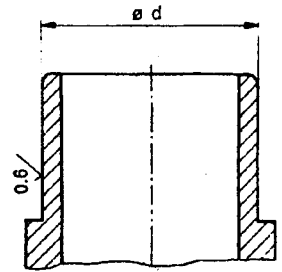


FIGURE 6

Note.  $\sqrt{0.5}$  denotes a maximum surface roughness of  $R_a = 0.5 \mu m$  ( $20 \mu in$ ).

The millimetre dimensions are derived from the original inch dimensions.

	a	b	c	d
mm	2.438 0 -0.01	2.286 +0.01 0	9.575 0 -0.01	9.474 +0.01 0
in	0.0960 0 -0.0004	0.0900 +0.0004 0	-0.3770 0 -0.0004	0.3730 +0.0004 0

Gauge for	Figure	Material
Sizing purposes	3 and 5	Steel (hardened)
Measurement of contact resistance	4 and 6	Under consideration
Measurement of gauge retention force	4 and 6	Steel (hardened) Weight : gauge Fig. 4 : Under consideration gauge Fig. 6 : Under consideration

1.3 Mating component for socket connectors for endurance test

Material: steel (hardened).

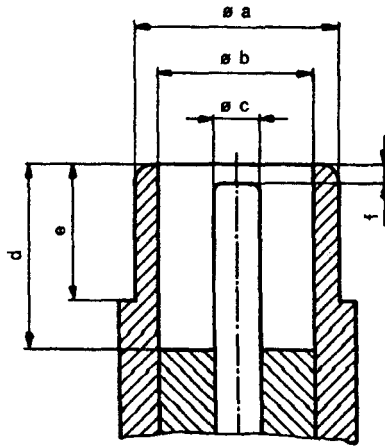


FIGURE 7

The millimetre dimensions are derived from the original inch dimensions.

	a	b	c	d	e	f
mm	9.576	8.05 min	2.438	9.1 min	7.112 min	0.8
	0 -0.01		0 -0.01			$\pm 0.4$
in	0.377	0.317 min	0.096	$23/64$ min	0.280 min	$1/32$
	0 -0.0004		0 -0.0004			$\pm 1/64$



2. Climatic group :

666

Rated temperature range : — 25°C to + 70°C

Damp heat, long term : 4 days.

3. Schedule for type test

This schedule shows all tests and the order in which they have to be carried out as well as the requirements to be met.

3.1 All specimens shall be subjected to the following tests :

Test	Clause of IEC Publication 169-1	Conditions of test	Requirements
Visual inspection	12		
Dimensions	13		
Contact resistance	14.3	For inner contact : gauges Figs. 3 and 4 For outer contact : gauges Figs. 4 and 6 Mated sets :	$R_2 = 10 \text{ m } \Omega \text{ max}$ $R_3 = 5 \text{ m } \Omega \text{ max}$ Inner contact $R_1 = 10 \text{ m } \Omega \text{ max}$ Outer contact $R_1 = 5 \text{ m } \Omega \text{ max}$
Insulation resistance	14.5		$10^8 \text{ M } \Omega \text{ min}$
Capacitance	14.9		5 pF max

3.2 The connectors shall then be divided into three lots. All connectors in each lot shall undergo the following tests :

Test	Clause of IEC Publication 169-1	Conditions of test	Requirements
<i>First lot</i> Effectiveness of clamping device against cable pulling	15.4.3	Cable to be used : 96-IEC-50-3-13 Inner conductor of cable connected : length of cable : 50 cm $F = 50 \text{ N (5 kgf)}$ $t = 1 \text{ minute}$	
Effect of cable rotation	15.4.2	Cable to be used : 96-IEC-75-4-13 Minimum bending radius : 5 cm Number of revolutions : 25	
Effectiveness of clamping device against cable bending	15.4.4	Cable to be used : 96-IEC-75-4-13 Length of cable : 50 cm $F = 50 \text{ N (5 kgf)}$ Number of bends : 25	

Test	Clause of IEC Publication 169-1	Conditions of tests	Requirements
Standard test sequence :	15.2		
Soldering	15.2.1	Soldering iron method : size B	
Gauge retention force (resilient socket contacts)	15.2.3	Inner conductor : gauges Figs. 3 and 4 Outer conductor : gauges Figs. 5 and 6	
Final measurements :			
Insulation resistance	14.5		1 M $\Omega$ min
Reflection coefficient	14.1		
Contact resistance	14.3		For inner contact $R_1 = 10 \text{ m } \Omega$ max For outer contact $R_1 = 5 \text{ m } \Omega$ max
Visual inspection	12		
Insertion and withdrawal force of mated connectors	15.3		Insertion force : Under consideration Withdrawal force : Under consideration
Climatic sequence :	16.2		
Dry heat	16.2.1		
Damp heat, accelerated	16.2.2	One cycle	Insulation resistance (hot) : 1 M $\Omega$ min
Cold	16.2.3		
Final measurements :			
Insulation resistance	14.5		1 M $\Omega$ min
Contact resistance	14.3		For inner contact $R_1 = 10 \text{ m } \Omega$ max For outer contact $R_1 = 5 \text{ m } \Omega$ max
Visual inspection	12		

<i>Second lot</i>			
Damp heat, long term	16.3		
Final measurements :			
Insulation resistance	14.5		1 M $\Omega$ min
Contact resistance	14.3		For inner contact $R_1 = 10 \text{ m } \Omega$ max For outer contact $R_1 = 5 \text{ m } \Omega$ max
Visual inspection	12		

Test	Clause of IEC Publication 169-1	Conditions of tests	Requirements
<p><i>Third lot</i></p> <p>Endurance test</p> <p>Final measurements :</p> <p>Insertion and withdrawal force of mated connectors</p> <p>Insulation resistance</p> <p>Contact resistance</p>	<p>17</p> <p>15.3</p> <p>14.5</p> <p>14.3</p>	<p>Mating component : see Fig. 7</p> <p>Frequency of operations : 40/min</p>	<p>As in first lot</p> <p>1 M <math>\Omega</math> min</p> <p>For inner contact <math>R_1 = 10</math> m <math>\Omega</math> max</p> <p>For outer contact <math>R_1 = 5</math> m <math>\Omega</math> max</p>

AMENDMENT NO. 1

Page 1

1.1 Connector

Insert the following new sub-clause:

1.1.1 Connector with push-pull coupling (without locking)

Under Figure 1, add the following:

Under Figure 2, add the following:

Note. — Dimension "a" applies only to hollow pins.

Note. — If the connector with socket contact is used as a fixed connector (4-hole panel-mounting) it should have a flange of 25.4 mm × 25.4 mm (1 in × 1 in) and a fixing hole spacing of 18.24 mm (0.7181 in).

Add the following new sub-clause:

1.1.2 Connector with screw lock

The dimensions specific to the connector with screw coupling are given in Figures 1a and 2a. All other dimensions and technical data are unchanged.

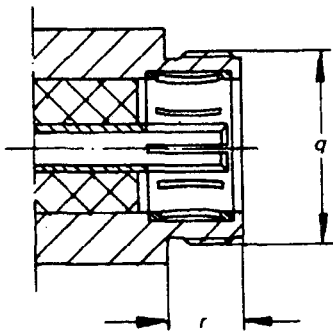


FIGURE 2a

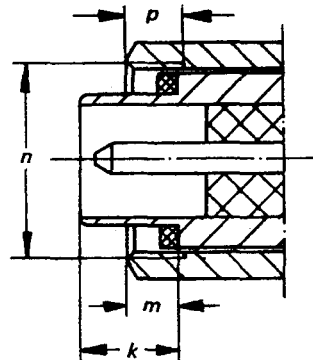


FIGURE 1a

The millimetre dimensions are derived from the original inch dimensions.

Ref.	mm		in		Fig.
	min.	max.	min.	max.	
k	7.11	7.54	0.28	0.30	1 a
m	3.5	4.5	0.14	0.18	1 a
n	M 14 × 1		M 14 × 1		1 a
p	4	—	0.16	—	1 a
q	M 14 × 1		M 14 × 1		2 a
r	5	—	0.2	—	2 a

Page 4

3. Schedule for type test

*After the first paragraph of this clause, add the following new paragraph:*

Connectors with cable entry are intended for cables with total outer diameter of 3.2 mm to 8 mm.

*Sub-clause 3.2*

*In the third column "Conditions of test" of the table:  
facing reference 15.4.3 (second column)*

*replace* 96-IEC 50-3-13  
*by* 96-IEC 50-3-1

*facing references 15.4.2 and 15.4.4 (second column)*

*replace* 96-IEC 75-4-13  
*by* 96-IEC 75-4-1

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*In the third column "Conditions of test" of the table:  
facing reference 17 (second column)*

*add* Number of operations: 500

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### Amendments Issued Since Publication

Amendment No.	Date of Issue	Text Affected

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